

EtherCAN / EtherCANopen Gateway

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anny Clients in Realtime Communication and Control



History

Version	Cre	eated	Validated		Rela	eased
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1.0	2015-08-03	Marcus	2015-08-04	Sten	2015-08-04	Marcus
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Happy Clients in Realtime Communication and Control

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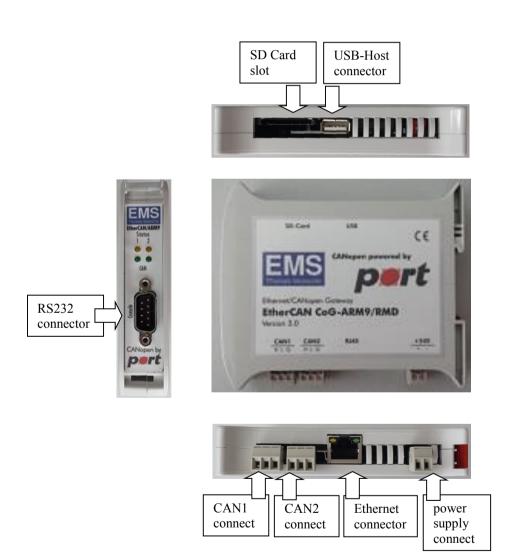
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1 Introduction

The EtherCAN ARM9 Gateway provides two CAN interfaces and connects decentralized CAN or CANopen networks with the classic Ethernet network. The TCP / IP protocol is used for Ethernet communications, while the CAN bus supports both, the "traditional" CAN (CAN Layer 2) or CANopen.

2 Device Scheme







For the setup of the gateway, the following requirements must be fulfilled:

- ✓ PC with a recent web browser (tested with Firefox and Chrome)
- ✓ connection to an Ethernet network
- ✓ Power supply 24V

For initial commissioning of EtherCAN ARM9 gateways, connect the device to an Ethernet network and provide power to the device.

4 Configuration via Webinterface

The EtherCAN ARM9 device can be configured via a recent web browser. When using factory defaults, the device has the IP address **192.168.199.22**.

The following section provides an overview of the configuration of the EtherCAN ARM9 device via a web browser.

<u>atei Bearbeiten A</u> nsicht <u>G</u>	Chronik Lesezeichen Extras Hilfe			-	0	23
EtherCAN	+					
	me.cgi?session=5500b46f-a13f-4a45-9499-6405; 🔻 (ी 🔠 - Google	₽ ☆	Ê	+ 1	
Meistbesucht 🊻 Erste Sch	rritte					
	EtherCAN Config	uration				
Welcome	Welcome.					
Basic configuration	You can use the navigation bar on the left	part of the screen to select the	e			
Date/Time	different configuration areas.					
CANopen server						
CAN server						
CAN logging						
SD Card						
Config. management						
Loqout						
	(c) port GmbH 201	4				

4.1 Basic Settings

4.1.1 General concepts

When making changes to the settings via the web interface, most of the changes will be active immediately. Nevertheless, the changes are not saved to persistent memory unless explicitly requested via "Config. Management" menu entry. This twostep process allows testing of new settings without touching a well-known configuration until all required settings are tested. The user will get a hint that additional saving is required in every configuration menu where this general concept applies:

Datei Bearbeiten Ansicht Chronik Lesezeichen Estras Hilfe □ □ ∞ EtherCAN + ① 192.168.199.22/m4d.cgi ⑦ C ② + Google P	EtherCAN + Configuration changed Info	<u></u>
Image: Second secon		7 自 🖡 🏦
Welcome Configuration changed Info Box Basic configuration CANopen server was restarted using the new settings. This page allows the configuration of the CANopen server for the different can interfaces. Date/Time Dont forget to <u>save the configuration to storage!</u> CANopen server CANopen server port GmbH Regenators of 06122 hale/Saarb port GmbH Regenators of 06122 hale/Saarb CAN locaina Tel. +49 0345 777550 Tel. +49 0345 77750	Welcome Configuration changed Info	
Basic configuration CANopen server was restarted using the new settings. This page allows the configuration of the different can interfaces. CANopen server CANopen server CAN server Port GmbH CAN server Rependence Str. 7b 06132 Hale/Seale CAN logaing Tel. +49 0345 777550	CAMerce control of the new office	
CAN server Regensburger Str. 7b 06132 Halle/Saale 06132 Halle/Saale CAN logging Tel +49 0345 777550	CANO	This page allows th configuration of the CANopen server fo
SD Card E-Mail Support	CAN server Regent CAN logging Tel. ++ SD Card Honging	Regensburger Str. 06132 Halle/Saale Tel. +49 0345 7775 Homepage

4.1.2 Login to the web interface

To access the web interface of the device, enter <u>http://192.168.199.22</u> into a browser and the following login page will be shown:

EtherCAN	+	
• • • @ 192.168.199.2 Meistbesucht M Erste S		
Welcome Basic configuration Date/Time CANopen server CAN server CAN logging SD Card Config. management Locout	Login User: admin Password: Daten absenden	Info Box Please login with username and password to configure the device. Port GmbH Regensburger Str. 7b 06132 Halle/Saale Tel. +49 0345 777550 Homepaage E-Mail Support

Please ensure, that the setup of the PC allows the connection to 192.168.199.0 network via setting the correct IP address/subnet of you PC Ethernet interface.

By entering the login information for "User" and "Password", the user has the possibility to configure the gateway in accordance with its requirements. When using factory defaults, the following settings apply:

User: admin Password: admin

The password can be changed using the "Basic configuration" page.



After login, the following browser interface is shown to the user:

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EtherCAN	+	and the second second			-	
192.168.199.22/welco	me.cgi?session=5500b46f-a13f-4a45-9499-6405; 🤍 C 🛛 🚼 -	Google 🔎	☆自	÷	俞	=
Meistbesucht 🎹 Erste Sch	ritte					
	EtherCAN Configuration	n				
/elcome	Welcome.					
asic configuration	You can use the navigation bar on the left part of the	screen to select the				
Date/Time	different configuration areas.					
ANopen server						
AN server						
CAN logging						
SD Card						
Config. management						
Logout						
	(c) part GmbH 2014					_

4.1.3 Basic configuration

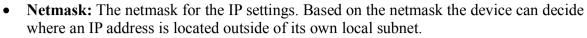
The basic configuration allows to enter basic settings of the device:

192.168.199.22/basic.cgi?sess	ion=c3e91a6f-6ed3-4aef-8e20-d0fbd4b387f3		P 🟠	Ê	1. 4	A
192.100.199.22/ Dasic.cgirses	10n=csestaot-oeds-4aet-6e20-d0fbd4b367f5	V C Google	~ w			1
Meistbesucht 🊻 Erste Schritte						
	EtherCAN Basic Co	nfiguration				
Nelcome	IP Configuration				Box	
Basic configuration	IP Address: 192.168.199.22				page allow guration of	
Date/Time	Netmask: 255.255.255.0				gs like IP a vay and H	
CANopen server	Gateway: 192.168.199.1			port	3mbH	
CAN server	DNS Server: 192.168.199.1				nsburger 9 2 Halle/Saa	
CAN logging	Hostname: EtherCAN9			Tel. +	49 0345 7	77550
SD Card	Access data (web interface)			Home E-Ma	page I Support	
Config. management	User: admin			1		
Loqout						
	Password:					
	Daten absenden					
	(c) port GmbH 201	4				

The basic configuration page allows the setting of

• **IP address:** The IP address where the device is reachable. This address applies to the web interface and to CAN(open) server as well





- Gateway: IP address of the gateway to be used for contacting IP addresses outside of its own subnet
- **DNS server:** The IP address of the DNS server which can resolve logical addresses.
- **Hostname:** The hostname of the device.
- User/Password: Username and password of the web interface.

4.1.4 Date/Time

The internal clock of the device can be set either manually or via central time servers using the NTP protocol. Two public NTP servers are setup by default but not activated.

When NTP servers are used, please ensure to set a proper DNS server and default gateway in the "Basic configuration" menu for internet access, otherwise public servers are not reachable. Also ensure that a possible firewall allows access to UDP port 123.

tei <u>B</u> earbeiten <u>A</u> nsicht <u>C</u> hroni EtherCAN	+	
192.168.199.22/ntptime.cgi Meistbesucht M Erste Schritte	'session=c3e91a6f-6ed3-4aef-8e20-d0fbd41 ⊽ C S + Google	오 ☆ 自 🖡 🏠
	EtherCAN Time Configuration	
Welcome Basic configuration Date/Time CANlopen server CAN longing SD Card	Automatic time settings Enable NTP clock sync NTP-Server 1: ptbtime1.ptb.de NTP-Server 2: ptblime2.ptb.de Manual time settings	Info Box This page allows the configuration of date and time settings. port GmbH Regensburger Str. 7b 06132 Halle/Saale Tel. +49 0345 777550 Homepage E-Mail Support
<u>Config. management</u>	Date (DD.MM.YV) 01.01.1970 Time (MM:HH SS 01.07.33 Daten absenden	
	(c) port GmbH 2014	

4.1.5 SD Card

The SD Card menu shows the current state of the SD Card that can be used for logging CAN data. It also allows the release of the SD Card from the system.



4.1.6 Configuration Management

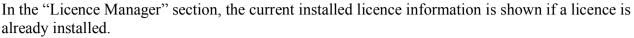
The "Configuration Management" menu allows the loading and saving of configurations to/from the flash memory. It also allows the installation of the license data for the CANopen Server if not already delivered via the factory defaults.

192.168.199.22/configman.cg	i?session=c3e91a6f-6ed3-4aef-8e20-d0fbd4b387 ▼ C	▶ ☆ 自 ♣ 俞
Meistbesucht 🎹 Erste Schritte		
	EtherCAN Configuration Management	
Nelcome	Firmware Version	Info Box
Basic configuration	Current version: 1.0.0RC1	This page allows loading and saving the
Date/Time	Configuration State	configuration to/from permanent storage.
CANopen server	Current configuration: Not saved yet	port GmbH Regensburger Str. 7b
CAN server	Configuration Actions	06132 Halle/Saale
CAN logging	Save configuration to flash	Tel. +49 0345 777550 Homepage
SD Card	Load configuration from flash Load factory defaults	E-Mail Support
Config. management	Action	
<u>.oqout</u>	Licence Manager	
	Current license: None	
	CANopen Server license file:	
	Durchsuchen Keine Datei ausgewählt.	

A configuration can be stored or loaded via the "Configuration Actions" section. There is also the possibility to load the factory defaults. The "Configuration State" entry shows whether the current configuration was already saved to the persistent storage.



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When uploading a new licence please ensure that the licence file name is set as provided. Some browser add additional information to a file for example if downloaded twice

(licence_0644_V53.dat becomes licence_0644_V53 (1).data when downloading a second time) which leads to an invalid license file.

4.2 CANopen Server

4.2.1 Introduction

The CANopen Server implements the protocol CiA 309-3 that allows the access of CANopen networks via TCP.

In addition to the CANopen server contained in this device, port provides a graphical user interface (CANopen Device Monitor) to communicate with CANopen devices using the CANopen server. Please see <u>CANopen Device Monitor</u> for further details.

The following section only describes the setup of the CANopen Server via the web interface. For a detailed description of functionality and the communication protocol, please consult the document "CANopen Gateway Server DS309-3 User Manual".

Depending on the type of ordered device, there may be no license installed on the device. In that case the CANopen server runs in demo mode with limited bitrate and restricted node id. To check whether a license is installed, please consult the "Config. Management" menu or the "CANopen server" page. A license can be purchased via service@port.de

4.2.2 Configuration

The CANopen server can be simply configured via a web interface.

Node ID, bitrate and TCP Server port can be set individually for each CAN interface. Bitrate settings for all services running on the same CAN interface must be equal. So the settings for CANopen Server, CAN Server and CAN logging must be the same on a CAN interface.

4.3 CAN Server

4.3.1 Introduction

The CAN Server implements a CAN-to-TCP gateway which allows monitoring of CAN-based communication via TCP connection.

In addition to the CAN Server contained in this device, port provides a graphical user interface (CANReport) to communicate with CAN devices using the CAN server. Please see <u>CAN-report</u> for further details.

The following section only describes the setup of the CAN Server via the web interface. For a detailed description of functionality and the communication protocol, please consult the document "CANserver Horch Reference Manual".

4.3.2 Configuration

The CAN Server can be simply configured via the "CAN server" menu.

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atei <u>B</u> earbeiten <u>A</u> nsicht <u>C</u> hror	ik Lesezeichen Extras <u>H</u> ilfe					X
EtherCAN	+					
A 102 168 100 22 /h and ani2	ession=5500b46f-a13f-4a45-9499-64058c9d93 🔍 😋 🛛 😵 🗸 God		☆	÷	↓ ☆	=
	ession=5500b46f-a13f-4845-9499-64058C9d95 V C	ogie 🔎	ਅ		• п	-
Meistbesucht 🎹 Erste Schritte						
	EtherCAN CAN Server Configura	ation				
Welcome	CAN1			Info		
Basic configuration	Enable CAN1 🗹			configu	age allows to uration of th	e
Date/Time					erver for th nt CAN	e
CANopen server	TCP-Server 1362			interfac	ces.	
CAN server	Bitrate 125 kbit/s 👻			port Gr	mbH sburger Str	7h
CAN logging	CAN2			06132	Halle/Saale	
SD Card	Enable CAN2			Tel. +49 Homep	9 0345 777	550
Config. management	TCP				Support	
Logout	Server					
	Port 1363					
	Bitrate 125 kbit/s 🚽					
	Daten absenden					

For each CAN interface the TCP server port and the bitrate can be set individually. Bitrate settings for all services running on the same CAN interface must be equal. So the settings for CANopen Server, CAN Server and CAN logging must be the same on a CAN interface.

4.4 CAN logging

The device offers the logging of CAN message to a SD Card. The configuration of the logging can be set up via the "CAN logging" page.

EtherCAN	(+ qi?session=814f7ca8-af0b-47b6-a31a- ▼ C 8 - Goog	le
Meistbesucht M Erste Schritte		
mestociaent III eiste seinnte		
	EtherCAN Logging Configurati	on
Welcome	CAN1	Info Box
Basic configuration	Enable CAN1	This page allows the configuration of logging services of the
CANopen server	Logging 🗖 Bitrate 125 kbit/s 🖵	EtherCAN.
CAN server	Size of logfile in	Regensburger Str. 7b 06132 Halle/Saale
CAN logging	MB: 10	Tel. +49 0345 777550 Homepage
<u>SD Card</u> Config. management	CAN2	E-Mail Support
Logout	Enable CAN2 Logging	
	Bitrate 125 kbit/s 👻	
	Size of logfile in MB: 10	
	Daten absenden	
	Log-Files	

For each CAN interface, bitrate and logfile size can set individually. Bitrate settings for all services running on the same CAN interface must be equal. So the settings for CANopen Server, CAN



Server and CAN logging must be the same on a CAN interface.

The logfile size determines the size of each individual log file. After reaching this size threshold, a new logfile is created on the SD Card. When there is no more space available on the SD Card. The oldest logfile is deleted and replace by a new file.

The filenames use the following pattern:

can<1|2>_<NUM>.log

So logfiles for CAN1 interface start with can1 followed by the number of log file e.g. can1_0.log for the first logfile aso.

Logfiles can be downloaded individually or as a zip archive containing all logfiles via the web interface. The data is stored on the SD Card as text files in the root directory and thus can be read by other devices such as a PC. Before removing a SD Card form a running system, please release the card via the SD Card menu otherwise the file system may be damaged.

5 Firmware update

The firmware of the device can be update via a SD Card. For a detailed description of a firmware update, please consult the document "EtherCAN ARM9 Firmware Upgrade".

6 Service and Support

In case of technical question please contact our support via support@port.de .